

# CASTLEMAINE

## EUCALYPTS

This issue of the Castlemaine Naturalist gives a guide to the Eucalypts of the district, and covers all of the species known to me that occur within a radius of 25 km.

It is not difficult to learn to recognise the local species, and the time spent doing so will be well rewarded by an increased appreciation of the bush, both locally and in more distant parts of Australia. Also, Eucalypts are the dominant plants in most of the Australian forests, and as such they are basic to any discussion of the bushland ecology.

You do not need to have a knowledge of botanical jargon or use complicated books. Bushmen learn to recognise their trees without any of these. The most useful characters are the general appearance of the tree, the kind of bark and the size, shape and arrangement of the leaves (and particularly the sucker leaves).

Other features that can be used include the vein pattern in the leaves, composition of the oil, shape, size and arrangement of the buds and fruit, the shape of the anthers, kind of wood, size and shape of the seeds and shape of the seedling leaves.

### GENERAL APPEARANCE

With practice, eucalypts can be recognised at a glance and at a distance (in the same way as we can recognise a friend). It is difficult, both with trees and people, to describe this briefly.

### THE BARK

Some Eucalypts have deciduous bark - the bark peels off each year leaving a smooth trunk; these Eucalypts are called gums

Other kinds have bark that remains on the tree. This permanent bark may be stringy (the stringybarks) or finely fibrous (the boxes and peppermints) or hard and rugged (the ironbarks).

It is not always easy to decide whether a tree is a gum or not. Sometimes gums keep their bark on the main trunk; this bark is usually hard and flaky, not fibrous. Yellow box too may sometimes have a gum-like appearance.

Rough bark is an adaptation against fire damage. Gums tend to be found in the less fire-prone areas, for example in the wetter forest, along streams or in forest that does not have an understory.

#### THE JUVENILE (OR SUCKER) LEAVES

The leaves of young plants (up to about a metre) may be quite different to those of the adult tree. The sucker leaves, growing from injuries, are similar to the juvenile leaves. The juvenile/sucker leaves are one of the best aides to identification. Fortunately, each of the local species have quite distinct juvenile leaves, but unfortunately few books on Eucalypts show the juvenile leaves, and some show them incorrectly.

#### THE BUDS

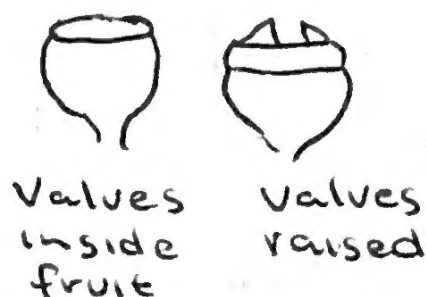
Buds are usually present on the tree for many months before flowering, and can often be found throughout the year. If the buds are too high to be reached, search the ground for fallen branchlets etc. The number of buds in a bunch can be important, however buds may often be missing from the cluster.

#### THE FRUIT

Usually the fruit remains on the tree for years. If too high to reach, old seed cases can usually be found in the litter underneath the tree or on fallen branchlets.

Each fruit has valves, which eventually open to release the seed. The valves may be level with the top of the fruit, or raised, or hidden inside the fruit.

If picking for seed, select the ripest seed cases possible that still contain seed.



#### EUCALYPTUS OIL

The amount of oil varies greatly between species. The broad-leaved peppermint and narrow leaved peppermint may have 4% or more oil. The sugar-gum has only about 0.1 % oil; some kinds have only a tenth of this.

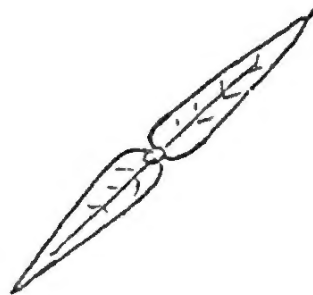


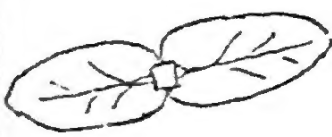

#### FROM THE GUINNESS BOOK OF RECORDS



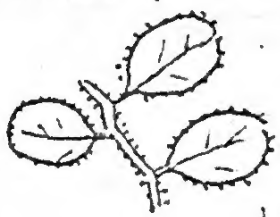
.... the fastest growing tree (in the world) is Eucalyptus deglupta, which has been measured to grow 35 ft (10.66 m) in 15 months in New Guinea. The youngest recorded tree to reach 100 ft (30.48 m) is 7 years for E. regnans in Rhodesia.



JUVENILE LEAVES (Leaves on saplings to about 1m; or sucker leaves)

JUVENILE LEAVES

Juvenile leaves stalkless and in opposite pairs		J leaves on stalks, not in pairs			
Juvenile leaves bluish		J leaves green	J leaves oval + green	J leaves narrow	
J leaves longer than wide	J leaves round				
Stems square Upper + lower leaf surfaces different colours	Stems round Upper + lower leaf surfaces equal				
		CANDLEBARK GUM	MANNA GUM	SWAMP GUM	RIVER RED GUM
BLUE GUM	YELLOW GUM				

Juvenile leaves are green & often with unequal sides. Appearance depends greatly on the size of the sapling		
J leaves fairly thin; sides of unequal size	J leaves thick and leathery	On small plants leaves small, oval bristly
		
MESSMATE	BROWN STRINGYBARK	RED STRINGYBARK

GENERAL APPEARANCE

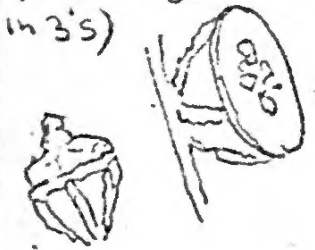





GENERAL APPEARANCE

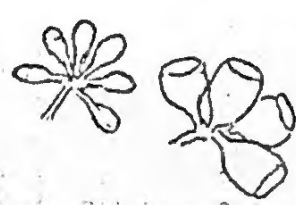
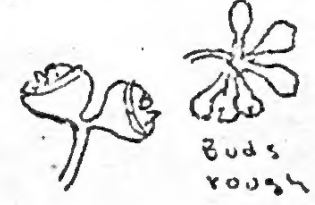
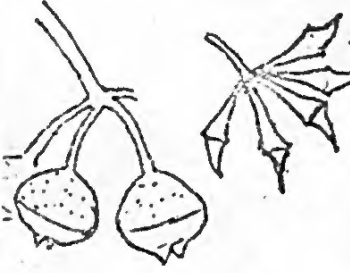
Large tree, Leaves large Bark brownish and ribbony	Leaves of average size and shape, often similar in appearance (check juvenile leaves)		Leaves wide, almost oval or egg shaped	Leaves of average size; often on creeks	check J leaves and buds.
	Often smooth bark to base	often rough bark at base, upper bark ribbony			
Usually on poor gravelly soil	Usually on better soil (e.g. granite)		In swampy areas		
BLUE GUM	YELLOW GUM	CANDLEBARK GUM	MANNA GUM	SWAMP GUM	RIVER RED GUM

Leaves dark glossy green, wider than usual, oblique (i.e. sides unequal)		Leaves green, of average size and shape
check fruit	check fruit	
MESSMATE	BROWN STRINGYBARK	RED STRINGYBARK

BUDS and FRUIT

BUDS and FRUIT

Buds + fruit single, stalkless (Subspecies pseudoglobulus in 3's)	Buds + fruit on long stalklets, valves of fruit enclosed	Buds and fruit with short stalklets; valves of fruit not enclosed			
		Buds + fruit usually in groups of 3	Buds + fruit in groups of more than 3		
		J leaves round Bark falls off in patches	J leaves long + pointed; upper bark falls off in ribbons	Cap on bud conical Fruit cone shaped	Cap on bud beaked Fruit ball shaped
					
BLUE GUM	YELLOW GUM	CANDLEBARK GUM	MANNA GUM	SWAMP GUM	RIVER RED GUM

Valves enclosed in the barrel shaped fruit. Cap on bud round + smooth	Valves not enclosed in fruit. Fruit ball shaped	
	Cap on bud rough (almost warty) + rounded	Cap on bud smooth, beaked and twisted
		
MESSMATE	BROWN STRINGYBARK	RED STRINGYBARK

OCCURRENCE

OCCURRENCE

Not native to district but is often planted	Dry gravelly areas. Widespread and common in the goldfields	Better soils e.g. granite areas. Not in goldfields.	Two distinct habitats - Granite hills e.g. Mt Alexander - Rivers in cold wet areas Not in goldfields	River and swamp trees	
				Swampy areas where too cold for red gum	Usually near water courses or swamps - in all soil types.

Trees of colder, moister areas		Widespread
In higher rainfall areas e.g. Mt Alexander	In higher rainfall areas e.g. Daylesford area	Common in goldfields and elsewhere

SCIENTIFIC NAME

SCIENTIFIC NAME



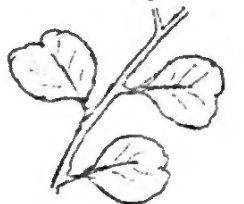
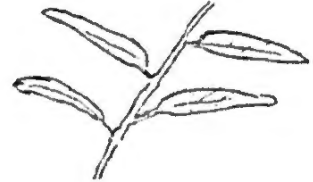
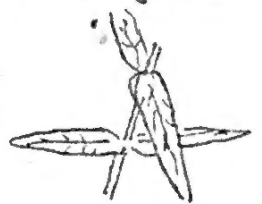


E. GLOBULUS (from supposed globular fruit)	E. LEUCOXYLON (= white wood)	E. RUBIDA (= reddish; bark is often red)	E. VIMINALIS (= willow-like)	E. OVATA (= Egg shaped, from leaves)	E. camaldulensis (from name of Italian monastery)
BLUEGUM	YELLOW GUM	CANDLEBARK GUM	MANNA GUM	SWAMP GUM	RIVER RED GUM

E. OBLIQUA (from oblique leaves)	E. BAXTERI (after Baxter)	E. MACRORHYNCHA (= large beak, from shape of cap)
MESSMATE	BROWN STRINGYBARK	RED STRINGYBARK

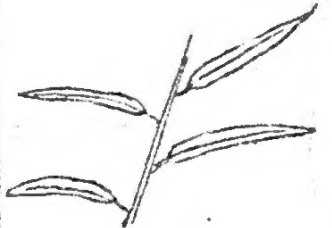
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JUVENILE LEAVES (saplings up to about a metre, or sucker leaves)

Juvenile leaves on stalks, <u>not</u> in opposite pairs				J. leaves stalkless <u>and</u> in opposite pairs			
J. leaves Kite Shaped	J. leaves small, oval (often bluish)	J. Leaves round, large, bluish	J. Leaves narrow and green	J. leaves narrow and green	J. leaves fairly broad but strap-shaped	J. leaves round	
							
GREY BOX	YELLOW BOX	RED BOX	WHITE BOX	SCENT BARK	NARROW-LEAF PEPPERMINT	BROAD LEAF PEPPERMINT	LONG-LEAF BOX

Juvenile leaves


RED IRONBARK

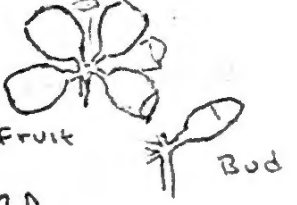
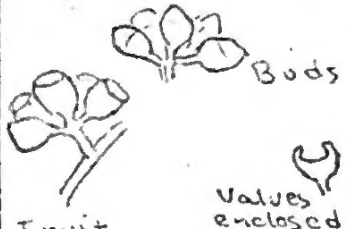
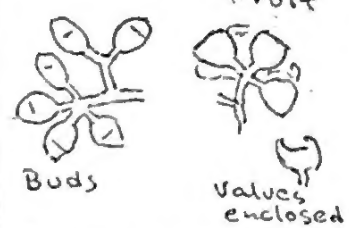
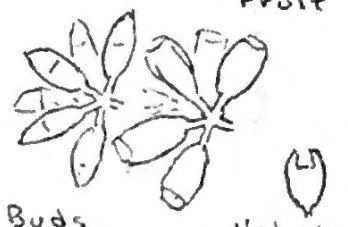
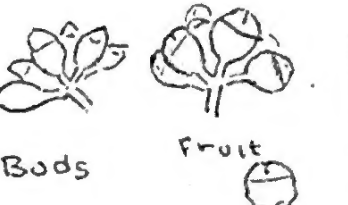
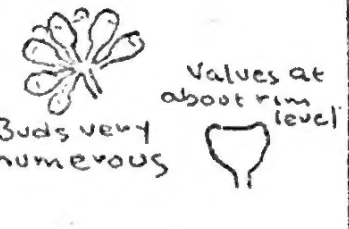
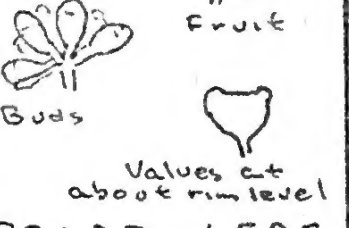

GENERAL APPEARANCE

Upper branches smooth (Gum-like)	Bark more or less rough to the smallest branches.						
Bark grey	Bark brownish often shaggy	Adult leaves fairly wide, often bluish		Adult leaves green, much longer than wide			
Adult leaves green	Leaves green or blue, but quite <u>small</u>	Leaves round	Leaves oval	Bark is more fibrous than box/peppermint	Leaves very narrow	Similar in general appearance	
GREY BOX	YELLOW BOX	Buds polished	Buds powdered white (branchlets also often powdered)	SCENT-BARK	NARROW-LEAF PEPPERMINT	Many oil dots in leaves	Leaves thick and leathery
		RED BOX	WHITE BOX			BROAD-LEAF PEPPERMINT	LONG-LEAF BOX

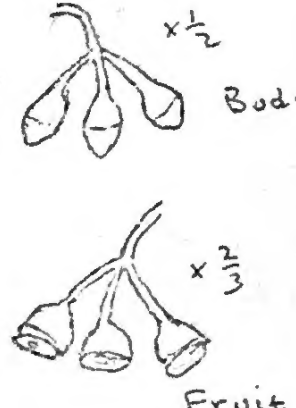
APPEARANCE

Bark hard, rugged, grey-black
A form in Bendigo Streets has weeping blue leaves and red flowers
RED IRONBARK

BUDS and FRUIT

Buds and Fruit on short stalks				Buds and fruit stalkless.			
Valves of fruit well below rim level		Fruit domed, Valves exerted (on dry fruit)		Valves of fruit ~ level with rim of the fruit. Cap of the buds round (O) and yellowish			
Buds not powdered white		Buds powdered white					
Buds and fruit ~ cylindrical	Buds almost spherical when fully grown. Fruit cup shaped	Buds and fruit mainly at leaf bases		Buds and fruit at ends of branches			
							
GREY BOX	YELLOW BOX	RED BOX	WHITE BOX	SCENT BARK	NARROW-LEAF PEPPERMINT	BROAD-LEAF PEPPERMINT	LONG-LEAF BOX

BUDS + FRUIT


RED IRONBARK

OCCURRENCE

Common, mixed with red stringybark and long leaf box on the goldfields			Uncommon in this district. Scattered. (More common in NE Vic)	Uncommon in this district. Past Glenluce on Mainsbury Road	Occurs only in moister areas e.g. Daylesford. Not in Muckleford or similar forests		Very common in most areas. Mallee-like on stony soils
Also with ironbark (common too on northern plains)	Prefers better soil (Bark may be light tan to black)	Mallee-like on stony ground, but can grow to large size			Prefers good soil e.g. close to basalt boundary, Porcupine Ridge Rd.	Often on stony ground e.g. Porcupine Ridge Road.	

OCCURRENCE

A goldfields tree, often with grey box
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SCIENTIFIC NAME

E. microcarpa (= small fruit)	E. melliodora (= honey-scented)	E. polyanthemos (= many flowered)	E. albens (= white)	E. aromaphloia (= scent-bark) (SPECIA)	E. radiata (= because of many radiating buds) NARROW LEAF PEPPERMINT	E. dives (= rich (in oil)) BROAD LEAF PEPPERMINT	E. gonioclayx (= ridged fruit) LONG-LEAF BOX
GREY BOX	YELLOW BOX	RED BOX	WHITE BOX	SCENT BARK	NARROW LEAF PEPPERMINT	BROAD LEAF PEPPERMINT	LONG-LEAF BOX

E. sideroxylon (= iron wood) RED IRONBARK
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## CLASSIFICATION

Early classifications were made on the basis of bark type; this proved to be unsatisfactory in that otherwise very similar eucalypts may have dissimilar bark.

Later classifications made use of the anther shape. A more recent classification by Pryor and Johnson uses a mixture of characters. They also use a letter code. The Eucalypts are divided into eight subgenera. These are

- A. Angophora (classifying Angophoras with the Eucalypts)
- B. Blakella (northern species e.g. Ghost Gum)
- C. Corymbia (Bloodwoods e.g. Red-flowering Gum, Spotted Gum and Lemon-scented Gum)
- E. Eudesmia (includes E. tetragona and E. erythrocorys)
- G. Gaubea (only two members, both uncommon interstate species)
- H. Idiogenes (only 1 member, E. cloeziana)
- M. Monocalyptus (Peppermints, Stringybarks and Snow Gum)
- S. Symphyomyrtus (a large group with all of the other members)

These subgenera are then divided into sections, series, subseries, species and subspecies, all of which are given a letter. Thus the Blue-mountains Silver Gum (E. pulverulenta) has the code SPINQ, and the closely related Spinning-top Gum is SPINN. The unrelated Red-flowering Gum has, however, the code CAFOA. An advantage of the code is thus seen - relationships can be seen at a glance. If one of the above subdivisions is not used, a colon is used in place of the letter (e.g. Yellow Gum, SUX:CA)

## REFERENCES

The best book for Australian (bush) Eucalypts is

Forest Trees of Australia, Hall, Johnston and Chippendale, (Aust. Government Printing Office)

A similar book, but for Victoria only is

Honey Flora of Victoria (Department of Agriculture).

A technical book, dealing with classification is

A Classification of the Eucalypts, Pryor and Johnson, (ANU)

A fairly comprehensive book covering many garden species is Eucalypts, Stan Kelly, (Nelson)

A standard Reference, but very technical and without illustrations

A Key to the Eucalypts, Blakeley (Forestry & Timber Bureau)

A companion to this, with illustrations of all known species (to 1968) is

Eucalyptus Buds and Fruits, Chippendale (Forestry & Timber Bureau, Canberra)



## WHERE TO FIND THE LOCAL EUCALYPTS

- Blue Gum Not native in the near district, but often planted e.g. Lawsons Bridge, Golden Point Road etc.
- Yellow Gum The local species is widespread e.g. Pyrenees Hwy near the Golf Club (with Grey Box); cnr Hargreaves and Turner St. The Red-flowering variety is planted in a number of streets e.g. Elizabeth St, Urquart St, Hall St.
- Candlebark Gum There is fine stand on the Calder Hwy, opposite the service station about a kilometre south of Taradale. There is a patch on the Faraday-Sutton Grange Road, about a kilometre west of the Mt Alexander turnoff.
- Manna Gum. There are two distinct populations. One grows on the granite mountains e.g. Koala Reserve, Mt Beckworth etc, the other along rivers e.g. Turtons Falls, Loddon R. south of Vaughan, and extending into the Trentham District
- Swamp Gum Rare here, but common on low areas to the south e.g. Glenlyon. A few trees grow on Mt Alexander.
- River Red-gum Common on the streams, particularly to the north. Possibly the only tree growing naturally along Barkers Creek.
- Messmate Mt Alexander, around the TV tower. Also Daylesford.
- Brown Stringybark Porcupine Ridge Road.
- Red Stringybark Widespread, but is less common than the associated box. Kalimna Park Road.
- Grey Box Very common and widespread e.g. Pyrenees Highway from the top of McKenzies Hill, where it grows as an almost pure stand, to the Golf Club. Mixed here with Yellow Gum.
- Yellow Box Widespread, e.g. High School Ovals
- Red Box Widespread e.g. Turner St. entrance to Kaweka Wild-flower sanctuary.
- White Box Uncommon in the district. Grows in White-gum Road.
- Scent Bark Uncommon. Grows a few km. south of Glenluce on the Drummond Road. Also at Tipperary Springs, Daylesford.
- Narrow-leaf Peppermint Porcupine Ridge Road.
- Broad-leaf Peppermint Cnr Glenluce-Drummond and Glenlyon Road.
- Long-leaf Box Widespread e.g. water tank, Kalimna Park.
- Red Ironbark Scattered e.g. The Monk. Planted specimens are growing in the western part of Kalimna Point reserve.

E. Perkins.